

## **Reducing the read noise of H2RG detector arrays by more efficient use of reference signals**

We present a process for characterizing the correlation properties of the noise in large two-dimensional detector arrays, and describe an efficient process for its removal. In the case of the  $2k \times 2k$  HAWAII-2RG detectors (H2RG) detectors from Teledyne which are being used on the Near Infrared Spectrograph (NIRSpec) on the James Webb Space Telescope (JWST), we find that we can reduce the read noise by thirty percent. Noise on large spatial scales is dramatically reduced. With this relatively simple process, we provide a performance improvement that is equivalent to a significant increase in telescope collecting area for high resolution spectroscopy with NIRSpec.